

# ***DEMPSTER***

**"A GUARANTEE OF QUALITY, SERVICE  
AND FAIR TREATMENT"**

COMBINATION CATALOG

**C  
1938**

## **Dempster Mill Mfg. Co.**

FACTORY AND GENERAL OFFICES

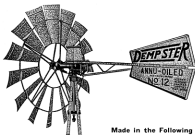
**BEATRICE, NEBRASKA**

**Telephone No. 113**

### **BRANCH HOUSES**

Kansas City, Missouri	1307 West 11th Street	Tel. No. Victor 6122
Omaha, Nebraska	808 Harney Street	Tel. No. Jackson 1776
Sioux Falls, South Dakota	322 East 8th Street	Tel. No. 381
Denver, Colorado	1943 Wazee Street	Tel. No. Keystone 1309
Oklahoma City, Oklahoma	9 East Grand Avenue	Tel. No. 2-8224
Amarillo, Texas	99 Polk Street	Tel. No. 2-2341
San Antonio, Texas	1329 South Flores Street	Tel. No. Fomin 5201

**DEMPSTER** No. 12 Annu-Oiled Windmills



**Roller Bearing—Self-Oiling**

**I**F SELECTING A WINDMILL, you should carefully consider the kind of service and durability you expect. All old-type mills required that someone climb the tower to oil them. For this reason, they were usually neglected and resulted in hard-running, short-lived mills. In keeping with the age of improvements and inventions, we offer you a mill with Timken Tapered Roller Bearings, running in field oil. This insures easy running and long life. In the use of these bearings, we are able to make the mill more compact, thereby reducing the weight and assuring more strength.

**Made in the Following Sizes:**

Size Feet	Length of Stroke, Inches	Gear Ratio	No. of Revolutions	Oil Necessary	Approximate Weight Pounds
6	5	4 to 1	5	2½ Pints	250
8	5½	3½ to 1	5	2½ Pints	350
8 (No. 12-A)	5½, 7½	3½ to 1	5	2 Quarts	380
10	5½, 7½	3 to 1	8	2½ Quarts	500
12	8, 10, 12	2 to 1	9	4 Quarts	1050
14	8, 10, 12	2 to 1	6	4 Quarts	1050
16	12, 14, 16	2 to 1	6	3 Gallons	2000
18	12, 14, 16	2 to 1	6	3 Gallons	3100

**T**HIS ILLUSTRATION OF THE Tower shows the complete gear assembly in their relative positions. The large gears turn on a very large high-carbon steel bearing.

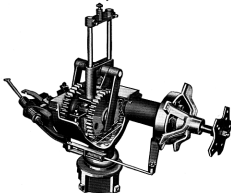
**Two Timken Tapered Roller Bearings on Main Shaft**



The main shaft has a Timken Tapered Roller Bearing at the outer end and one between the two small pinions. Also note how the gears run in the fluid oil—the self-oiling feature which insures easy running and long life.

The larger illustration also shows practically all the working parts. The pinions are at the bottom of the stroke; the cross head with oil cup has just oil'd the guide rods. Double bumper spring, consisting of two short, stiff, yet flexible springs instead of the usual loose spring on the bumper, absorb the shock caused by the mill going into the wind.

**Main Gear Assembly**



For Full Details of Construction, See Following Pages

## 6 Great Features of the **DEMPSTER** No. 12 Windmill

**1. Main Shaft Assembly** is shown ready to place in the main frame.

The Timken Tapered Roller Bearings absorb the thrust and wear of the shaft.

The automatic take-up spring takes up any wear in the bearings. You will never have to replace the main shaft because of wear.

The small pinions carry the greatest strain and are made of steel.

**2. Crosshead and Gears.** The oil from the dippers drips into the pan on the crosshead. Holes from this pan allow the oil to flow onto the guide rods on the upward stroke. The crosshead strips oil from the guide rods, which oils the wrist pin. Half of this oil flows across to the other guide rod.

The large, machine-cut, equalizing gears work independent of each other on a high-carbon steel bearing, constantly oiled. The gears run in an oil bath. Each gear carries its

full part of the load, preventing undue strain and breakage. Machine-cut, all fit perfectly and run smoothly. The position of the pitmans, in an almost perpendicular lift on the crosshead, decreases the friction and wear.

**3. The Ball-Bearing, Self-Aligning Turn-Table** allows quick response to the least breeze. This is a distinct advantage over old-type washer bearing turn-tables.

Ball races are semi-steel, especially hardened and finished smooth to permit balls to roll freely. Enough balls are used to withstand five times the load they carry. Lower race has a spherical surface, which fits a similar one on the tower cap. This insures the even distribution of weight on all the balls.

**4. Timken Tapered Roller Bearings**

add years of life to the Dempster Mill. Wear is taken off the shaft and put onto these bearings. There is practically no wearing effect on Timken Bearings, when kept constantly oiled as in this mill. These bearings make the mill run easily.

**5. The new**

**Dempster Internal Expanding Brake** is remarkably effective. (You know how useless the average windmill brake becomes after a few years.)

This brake has a heavy cast shoe with special steel brake lining. It is pivoted on substantial supporting lugs cast integral in the frame. The brake combines the best features of both the steel band brake and cast shoe brake. The flexibility of the steel lining allows the brake to be applied gradually and yet it holds the wheel firmly against rotation. The rigidity and sturdiness of the shoe prevents dragging and squeaking.

This new type internal expanding brake used on the Dempster, will last and work as long as the mill. It is not applied by the action of the wind, as on most other windmills, but is applied by pulling the lever at the bottom of the tower. The Dempster Brake works independent of the hub and will not drag. The expansion of the brake band is in the same direction as the travel of the hub, which is one reason why the Dempster Brake is effective.

**6. Improved Wheel**

**Spider** is made with a split hub which clamps around the wheel shaft. A heavy steel bolt clamps the spider securely to the shaft.

A key further secures the spider. It is impossible for the Dempster Wheel to come loose.



**10 Other Great Features of the *DEMPSTER* No. 12 Windmill**

**7. Annu-Oiled Pump Rod Swivel** operates in grease and holds a sufficient supply to last a year. It has an adjustable nut to take up all wear.

The head of the pump rod is forged to the rod—there are no threads to strip or nuts to work loose.

The load is carried on the solid forged head of this rod—there is no strain on the adjusting nut.

This pump rod swivel is silent, efficient and lasting.

**8. Simple Shut-Off Device** consists of a pull-out tube with a guide in the lower end of the pipe stem. Annu-oiled pump rod swivel at the lower end of the pull-out tube is connected to the pull-out lever at the bottom of the tower by means of a heavy pull-out wire. There is no swivel rod to wear out.

**9. High-Grade Material** is used throughout this windmill. All shafts and pins are made of high grade, cold-rolled steel, with sufficient carbon content to assure long wear. Castings are close-grained, gray iron, particularly adapted to windmill construction.

**10. Positive Oiling Feature.** The internal working parts of the Dempster Mill are constantly oiled by a simple system of "drip and carriage," which keeps every working part properly oiled at all times.

**11. Oil Only Once a Year.** Once a year the oil should be drained, and the oiling system washed out with kerosene or gasoline and refilled with new Dempster Windmill Oil.

**12. The Dempster Scientifically Designed Wheel** as shown has the fewest parts possible. It is light,



strong and powerful. It is sensitive to the slightest breeze and stands up under the hardest wind. Fans are securely fastened to circles to keep their proper curvature and position. They cannot spring out of shape. The wheel is thoroughly galvanized.

**13. The Sturdily Braced Angle Steel Vane Stern** will not sag or buckle. It is thoroughly galvanized and will not rust. Provides ample support for the vane.

**14. Double Spring Bumper** consists of two short, stiff, yet flexible springs, instead of the usual long springs on the bumper, which absorb the shock caused when the mill goes into the wind.

**15. Perfect Regulation** assures proper speed at all times. The Dempster No. 12 Mill pumps in the slightest wind and takes care of itself in the strongest wind. It turns out of the wind according to the variations of the wind, responding quickly without jerking or racking.

**16. Weather-Proof Hood** is of galvanized sheet steel and fits snugly over the working parts. It keeps out dirt and moisture and cannot come loose.

With proper care, this mill will give satisfactory service for years. If, because of neglect, it is necessary to replace a part, this can be done quickly and easily without lowering the mill to the ground.

**DEMPSTER** No. 12-A Windmills

Made in 8-Foot Size Only

**Timken Tapered Roller Bearings**

Timken Tapered Roller Bearings add years of life to the Dempster Mill. Wear is taken off the shaft and put onto these bearings. There is practically no wearing effect on Timken Tapered Roller Bearings, when kept constantly oiled as in this mill. These bearings make the mill run easily.

**Simple Shut-Off Device**

This device consists of a pulloff tube with a plunger rod guide casting riveted in the lower end of it. A ball and nut at the lower end of the pulloff tube are connected to pulloff lever at bottom of tower by means of a heavy pulloff wire. There is no worn rod to wear out, by getting twisted around the plunger rod.

**Internal Expanding Brake**

The internal expanding brake illustrated at the left combines the best features of both the steel brake and cast shoe brake. It has a heavy cast shoe with a special steel brake lining, and is pivoted on substantial supporting legs cast integral in the frame. Flexibility of the steel lining allows

brake to be applied gradually and will hold the wheel steady against rotation. The rigidity and sturdiness of the shoe prevent dragging and squeaking.

**Perfect Regulation**

Perfect regulation assures proper speed at all times. Dempster No. 12-A Mill pumps in the lightest wind and takes care of itself in the strongest wind. It turns out of the wind according to variation of the wind, responding quickly without jerking or rocking.

**Main Shaft Assembly**

Tapered roller bearings absorb the thrust and wear of the shaft. Automatic take-up spring takes up any wear in the bearings.

**Weather-Proof Hood**

The hood is of galvanized sheet steel and fits snugly over the working parts. It keeps out dirt and moisture and cannot come loose.

**Sturdily Braced Angle Steel Vane Stem**

Will not sag or buckle. Thoroughly galvanized. Provides ample support for vane.

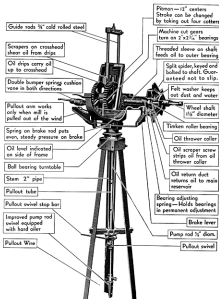
**Scientifically Designed Wheel**

The wheel illustrated has the fewest parts possible. It is light, strong and powerful. It is sensitive to the slightest breeze and stands up under the hardest wind. Vans are securely fastened to circles to keep their proper curvature and position. The wheel is thoroughly galvanized.

**Made in the Following Size**

Size.....	feet	8
Length of Stroke.....	inches	57½, 73½
Gear Ratio.....		3¼ to 1
No. of Sections.....		5
Oil Necessary.....	quarts	2
Approx. Weight.....	pounds	288

# Features of the **DEMPSTER** No. 12-A Windmill



**DEMPSTER 8" No. 12A**

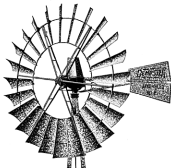
The above illustration shows you many other outstanding features of the Dempster No. 12-A Windmill, including: ball bearing turntable, independent pullout arm, oil level indicator, improved washer bearing swivel, Tinker Tapered Roller

Bearings,  $\frac{3}{8}$ -inch guide rods of cold rolled steel, double bumper springs to cushion vane in both directions, and many other features that insure better performance and long life.

Study the above illustration and you will see why the Dempster No. 12-A Windmill always pumps in the slightest breeze.

**DEMPSTER**

No. 15 Direct-Stroke Annu-Oiled Windmills

**Timken Tapered Roller Bearings**

Two sets of Timken Tapered Roller Bearings reduce friction of its toll in this windmill. These positively aligned, self-adjusting, tapered bearings insure smooth running, friction-free performance for years. A take-up spring on the main shaft keeps the bearing snug and running free. They will never need replacement.

**Self-Adjusting to the Wind**

You may put your Dempster in a far away pasture, leave it at work 24 hours a day the year around, oil it once in 12 months, and be confident that it will take care of itself in all kinds of weather.

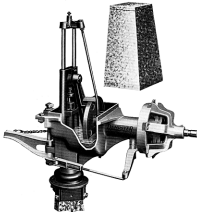
The wheel is designed to give the No. 15 perfect control in high winds. When the wind velocity is so great that the ordinary mill begins to gallop and wear itself out, the Dempster turns slightly out of the wind and keeps on pumping at a safe speed.

**Strong, Powerful Wheel**

Tests in the Dempster plant and under actual outdoor conditions prove that the steel wheel of the No. 15 Dempster Windmill gets every ounce of power from the lightest winds. The average winds are light winds. The area and pitch of the fans, the weight of each part, and the position of the wheel on the turntable, are scientifically correct.

**Made in the Following Sizes:**

Size.....	feet	8	10	12
Length of Stroke.....	inches	5 $\frac{1}{2}$	5 $\frac{1}{2}$ , 7 $\frac{1}{2}$	5 $\frac{1}{2}$ , 7 $\frac{1}{2}$ , 9 $\frac{1}{2}$
Number of Sections.....		6	6	8
Oil Required.....	2 $\frac{1}{2}$ Pints	3 Quarts	4 Quarts	
Approx. Weight.....	pounds	350	515	750

**DEMPSTER** No. 15 Main Assembly**These Features Assure Long Life:****Simple Power Mechanism**

There are fewer working parts in the Dempster direct-stroke motor; fewer parts to get out of order. Extra heavy construction of each part in addition to proper lubrication insure lifetime service without repairs.

**Long-Wearing Cross Head and Guide Rods**

The cross head is unusually heavy and carries the pumping load without strain. It operates on high-grade babbit bearings, and will last indefinitely if properly lubricated. Guide rods are made of cold-rolled steel with a high carbon content.

**Well Balanced on a Ball-Bearing Turntable**

The Dempster responds to the slightest change in the direction of the wind because it is perfectly balanced on a self-aligning ball-bearing turntable. Special cast iron races, ground to glass smoothness, insure the even distribution of weight on all the bearings. Perfect balance eliminates wear on any bearing.

**Positive Oiling System**

Every moving part is constantly lubricated by the dip and step-up action—the most positive oiling system ever designed. Change oil once a year and forget about lubrication the rest of the time.

A dipper on the face plate carries oil to the cross head, where it is stepped up on the guide rods to the

upper pitman pin. A second dipper oils the rear main bearing. A spiral carrier on the main shaft carries oil to the far bearing. A felt washer located at the outer bearing on the wheel shaft prevents dust or rain from blowing into the case. A simple but highly efficient device stops the oil at this point. It drains back through the main shaft housing to the reservoir.

**Large, Heavy Main Shaft**

The extra heavy main shaft is made of 40-point carbon content steel  $1\frac{1}{4}$  inch in diameter on the 8-foot mill,  $1\frac{3}{4}$  inches in diameter on the 10-foot mill, and  $1\frac{5}{8}$  inches in diameter on the 12-foot mill. The shaft is carefully machined and polished. The bearings take up all the thrust and wear so that the shaft, the heart of the mill, will always run true without wear. The automatic take-up spring on the shaft keeps the bearings adjusted. Years and years of service will not throw this shaft out of line. A spider is securely locked on the shaft with a cast-rolled nut and cotter pin.

**Brake Works for Years**

The Dempster Internal Expanding Brake operates like the brake on an automobile. It is applied by the hand lever only and is not affected by the action of the wind. It cannot drag. The action is positive. When the brake is applied, the mill stops without any slipping or squeaking. You can depend upon this brake to do the work right as long as the mill lasts.



**DEMPSTER** Style B Towers

Made in 2 and 2½-inch Angle Steel—For 5, 6 and 10-Foot Windmills

**Built to Stand the Storms**

THE DEMPSTER STYLE B TOWER is the result of more than half a century's experience manufacturing towers and windmills. This new tower embodies many exclusive features which assure strength and long life.

**Easier Construction**

The new Dempster Style B Tower can be erected equally well by being constructed complete, building up section by section, or being erected on the ground and then raised afterward. In building up from the ground, each section can be finished completely before the next one is started, as the girts are below the splices. None of the bolts have to be loosened again to put on the upper braces.

Note the utter simplicity with which the tower can be erected as shown by the illustrations above.

Wood girts at the bottom prevent buckling if the completely constructed tower is raised from the ground into an upright position.

**Made in the Following Sizes:**

Height feet	Diameter of Base Diameter of Crown		Approx. Surface Weight Pounds	
	At Top End of Anchor Posts	Spread of Corner Posts	4-inch	2½-inch
22	4'3½"	4'4½"	390	415
28	5'5"	5'6"	430	510
33	6'6½"	6'7½"	500	600
39	7'7½"	7'8½"	600	710
44	8'8½"	8'9½"	700	815
50	9'9½"	9'10½"	811	945
55	10'11"	11'0"	934	1080
61	12' ¼"	12'1½"	1062	1220
66	13'1½"	13'2½"	1200	†1520
72	14'2½"	14'3½"	*1540	†1735
77	15'3½"	15'4½"	1755	†1950
83	16'5"	16'6"	*2020	†2200
88	17'6½"	17'7½"	....	†2450
94	18'8½"	18'9½"	....	†2725
99	19'9½"	19'10½"	....	†2925

\*The 2-inch towers are equipped with 2½-inch corner posts below 66 feet.

†The 2½-inch towers are equipped with 2½x2½x3½-inch corner posts below 61 feet.

For Details of Construction See Following Page.

**Strength and Long-Life Features of the  
Style B Towers****DEMPSTER**

**1. Wooden Girt.** The bottom girt is made of wood because a steel girt becomes bent from the countless times it is stepped on and for this reason pulls the tower in at the bottom. The wooden girt prevents such buckling. It also steadies the tower when it is erected on the ground and raised to position.



**2. Rigid Corner Posts.** All corner posts are made of high quality 2x2-inch and 2½x2½-inch angle steel. All girts are below the splice.

**Eccentric Washers.** Wire braces are easily and quickly tightened by means of the eccentric washer on the upper end of each brace. It never slackens back. By simply turning this washer, the brace is made as tight or as loose as desired.



**3. Girts Every 5½ Feet.** Heavy, angle steel girts extend horizontally from corner post to corner post, every 5½ feet, from the top of the tower to the bottom. Placing the girts so close together assures great strength.

**4. Convenient Pullout.**

The pullout is arranged to provide the proper leverage which enables you to pull the mill out of the wind easily.

It is a long wood lever attached to the corner post.

**5. Adjustable Swinging Pump Rod Guides**

keep the wood pump rod in line with the pump. These guides are made from round galvanized steel and are bolted to the wood pump rod and to the girts.



**6. Anchor Posts.** Substantial anchor posts and plates, made from angle steel, provide a strong anchorage. Each post has two angle plates which give ample service for anchoring the tower.

The plates and posts are galvanized and cannot rust.

**Many Other Superior Features****Extra Well Braced**

All braces are of heavy twisted wire. They adjust themselves to expansion and contraction by hot and cold weather, and prevent over straining of tower at any point. Can be easily tightened by an eccentric washer and never slacken back. All towers 39 feet high and higher have double sets of braces, or braces every 5½ feet from 28 feet on down.

**Substantial Platform**

The wood platform of the Dempster Tower insures safety and accessibility when working on it. The platform is securely fastened to the tower by steel angle supports.

**All Steel Parts Galvanized**

All steel parts are galvanized by the "hot dip" process, to prevent rust. They are galvanized after the punching and cutting to insure galvanizing of all exposed surface. All bolts are galvanized by the electro process.

The top corner posts are 11 feet and the extensions are 11 feet 4 inches except on the intermediate sizes which have a lower extension 5 feet 10 in. long.

**Improved Ladder**

The improved ladder is the best ladder ever used on a Dempster Tower. It is built with angle side bars and channel iron steps. It is absolutely safe.

**Note These 15 Features:**

1. Rigid corner posts.
2. Girts every 5½ feet.
3. Extra strong, improved ladder.
4. Exceptionally well braced.
5. Full 11-foot sections.
6. Heavy anchor posts and plates.
7. Wood girts at bottom.
8. Swinging rod guides.
9. Heavy duty platform.
10. Eccentric washers for tightening braces.
11. All bolts galvanized.
12. Convenient pullout.
13. All channel and angle iron hot dipped galvanized.
14. All parts galvanized after cutting and punching.
15. Outside step girt for inspecting.

**DEMPSTER** Style A and 3H Towers

Made in 3-Inch Angle Steel Only

Style A, for 12 and 14-Foot Windmills  
 Style 3H, for 16 and 18-Foot Windmills

THE 3-INCH STYLE A TOWER is designed for 12 and 14-foot windmills. It is of sprung construction, and the spread at the base of the tower will average one-fourth of the height.

Corner posts are 10 feet long—all parts being cut and punched before galvanizing. All holes in one side of angle are punched at the same time. For this reason, there can be no variation in punching.

Girts are above the splice. The tower may be completely erected on the ground, and then raised afterwards, or built up section by section.

THE 3-INCH EXTRA HEAVY STYLE 3H TOWER is recommended for 16 and 18-foot windmills. Extra heavy towers have girts and braces every 5 feet, with girts below the splice of the corner posts. This makes the tower easy to build up section by section. The bottom girt of extra heavy towers is furnished in steel only. Since the bottom girt is bolted to anchor posts, extra heavy towers must be built from the ground up.

All towers are shipped complete with anchor posts and pulloff.

Be sure to specify the size mill to be used on the tower, as the holes for stern stay and platform are punched differently.



## Made in the Following Sizes:

Height Feet	Spaced at Base, Center to Center		Approx. Weight, Lbs. For Mills to 12 Feet		For Mills 14 to 18 Feet	
	Style A	Style 3H	Style A	Style 3H	Style A	Style 3H
24	5' 3/4"	4' 11 1/4"	530	579	794	794
30	7' 9 1/4"	7' 8 1/4"	755	795	1179	1179
40	10' 6 3/4"	10' 5 1/4"	1065	1045	1599	1599
50	13' 2 3/4"	12' 2 3/4"	1390	1350	2000	2000
60	16' 3/4"	15' 11 1/4"	1695	1651	2300	2300
70	19' 5 3/4"	.....	2079	.....	.....	.....
80	22' 6 3/4"	.....	2455	.....	.....	.....
90	25' 3 3/4"	.....	2825	.....	.....	.....
100	28' 3/4"	.....	3205	.....	.....	.....

\*Made of 2 1/2-inch extra heavy angle steel.

## Features

1. **Wooden Girt.** The bottom girt is made of wood on the style A Tower and of steel on the Style 3-H Tower.



2. **Rigid Corner Posts.** Corner posts are made of sturdy, high quality heavy angle steel of 3x3-inch or 3x3-inch extra heavy angle. This depends upon the height of the tower and the size and weight of the mill to be used. They are cut to length and punched by a special process in our plant before they are galvanized, obviating any chance of the galvanizing becoming broken or peeling off.



Features of the **DEMPSTER** Style A and 3H Towers



**3. Eccentric Washers.** Braces are tightened by means of the eccentric washer on the lower end of each brace.

By simply turning this washer, the brace is made as tight or as loose as desired.



**4. Brace Tighteners** are attached to the intermediate steel girts. They clamp the heavy twisted wire braces to the girts, preventing the girts from springing or buckling, and further strengthen the entire tower.



**5. Girts Every 5 Feet.** Heavy angle steel girts extend horizontally from corner post to corner post, every 5 feet, from the top of the tower to the bottom.

Placing the girts so close together assures great strength.



**6. Convenient Pull-out.** The pullout is arranged to provide for the proper leverage which enables you to pull the mill out of the wind easily.

It is a long wooden lever attached to the corner posts. A ratchet pullout is furnished with 3-inch extra heavy towers.

**7. Swinging Pump Rod Guides** Keep the rod perfectly true and in line with the pump.

They are made from round galvanized steel, bolted to the wood pump rod and to the girts, forming a triangular swivel.



**8. Upper Pump Rod Guide** is attached to the third girt. It keeps the rod in perfect alignment and helps strengthen the tower.

The guide consists of a cast frame attached by means of four twisted wires to the corners of the tower.



**9. Heavy Anchor Posts.** Extra heavy anchor posts and plates, made from non-breakable angle steel, provide a strong anchorage.

The plates have an extra large surface.

The posts and plates are galvanized and cannot rust.



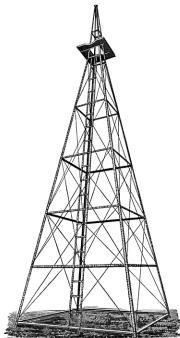
**10. Extra Well Braced.** All braces are of heavy twisted wire. Adjust themselves to expansion and contraction in hot and cold weather. Prevent overstraining of tower at any point. Can be easily tightened by an eccentric washer.

Three-inch extra heavy towers for 16 and 18-foot windmills have a double set of braces.



**DEMPSTER** Wide-Spread Ranch Towers

Made in 2-inch Angle Steel for 6 and 8-Foot Windmills  
 Made in 2½-inch Angle Steel for 10-Foot Windmills



**T**HIS RANCH TOWER is designed to meet the demand for a tower with an extra wide base. It is adapted for open dug wells of large diameter where it is not possible to use the ordinary type of tower. It provides sufficient spread to insure substantial anchorage, and in a low tower of this construction, allows plenty of room to operate the pump.

The construction of this tower is exactly the same as the Dempster Style B with the exception that the corner posts are slightly bent near the platform and the girts are longer, providing the extra wide spread at the base.

**These Features Mean Strength and Long Life:**

**Substantial platform.**

**Sturdy ladder.** Angle side bars and channel steps.

**Easier construction.** This ranch tower may be easily built up, section by section. In view of the extra wide spread, it is not advisable to erect on the ground and then raise. Furnished with steel girts on the bottom.

**Girts every 5½ feet.**

**Eccentric washers on wire braces.**

**Extra well braced.**

**Adjustable swing pump rod guides.**

**All steel parts galvanized** by the "hot dip" process after punching and cutting. Rust is prevented. All bolts are galvanized by the electro process.

**For detailed information of construction details** see pages 8 and 9 which cover Style B Towers.

Furnished in the 2 and 2½-inch angle only. The 2-inch angle is recommended for 6 and 8-foot windmills. The 2½-inch angle is recommended for 10-foot windmills.

For 12, 14, 16 and 18-foot sizes, use Styles A and 3H Towers described on pages 10 and 11.

**Made in the Following Sizes:**

Height.....	22	28	33	39
Spread at Base.....	7' 4"	9' 4½"	11' 5½"	13' 6¼"
Shipping Weight, 2x2-Inch.....	400	590	625	690
Shipping Weight, 2½x2½-Inch.....	450	565	700	840

# DEMPSTER Galvanized Substructures for Storage Tanks



Dempster 20-Foot Substructure and 15x10-Foot Wood Tank

Substructures can be furnished in the sizes indicated by the table at the bottom of this page. Steel joints and ladders for tank, as indicated by the table, can be furnished when ordered, at additional cost.

These towers must always be set on substantial cement piers. Anchor plates and anchor bolts and two I-beams, which fasten to the tower, are supplied with each tower. Wood joints or steel joints on which the tank must set, are furnished at an extra cost.

We cannot supply walk ways or hand rails for these towers because there is little need for them on towers 25 feet or less in height.

In cold climates the tank should have a double roof and care should be taken to select a tank large enough. Capacity will be reduced during cold spells by the formation of ice around sides, which will be from 12 to 18 inches thick. (Illustrations showing how to frost-proof the rise pipe will be sent on application.)

The illustration to the left shows a Dempster 20-foot tower and a 15x10 foot Dempster wood tank. A 20-foot tower with a Dempster Storage Tank will put running water in the farm house and about the farm.

Dempster Wood or Steel Storage Tanks can be furnished for these towers.

A blue-print, showing foundation plan and location of every part on tower, furnished with every tower.

Write us and let us tell you how to make the American farm modern with Dempster Water Supplies.

### Made in the Following Sizes:

Tank Diameter Feet	Tank Height Feet	Approx. Weight, Pounds, Per Foot				Recommended Size of Material for Making Wood Joists, Per Foot
		16-Ft. High	15-Ft. High	14-Ft. High	12-Ft. High	
5	5	370	400	415	720	2x6
5	7	370	400	415	720	2x6
6	6	410	500	670	775	2x6
6	8	490	580	775	....	2x6
7	7	525	620	880	1020	2x8
7	9	575	730	985	....	2x8
8	8	625	790	1050	1220	2x10
8	10	675	870	1150	....	2x10
10	10	990	1220	1560	1690	2x10
10	12	1040	1325	1700	....	2x10
12	12	1690	2100	2600	2895	4x12
12	14	1810	2300	2920	....	4x12

Prices are complete for tower with two steel I-Beams Caps for top of tower that joints set on, plates and bolts to set on cement piers, but do not include wood or steel joint or platform for tank. Joints can be supplied by your local lumber dealer.

Either steel or wood tanks can be furnished with these towers.

### Specifications on Galvanized Substructures and Accessories for Wood or Steel Tanks

Galvanized Steel Joist	Size Tank Feet	Approx. Weight Lbs.	Ladders	
			Approx. Wt. Lbs. Steel Wood Ladder	Approx. Wt. Lbs. Steel Wood Ladder
3-inch Galv. Steel I-Beam Joists for ...	2x6	99	52	26
3-inch Galv. Steel I-Beam Joists for ...	6x6	125	56	27
3-inch Galv. Steel I-Beam Joists for ...	7x7	185	66	32
4-inch Galv. Steel I-Beam Joists for ...	8x8	290	80	42
4-inch Galv. Steel I-Beam Joists for ...	10x10	320	85	52
5-inch Galv. Steel I-Beam Joists for ...	12x12	810	90	58

Can furnish wood joints on special order.

**DEMPSTER** Suburban Towers

**S**UBURBAN TOWERS are designed for those who wish an overhead water supply system to provide water, under constant pressure, for the house, barn, garden or lawn. Although we recommend a separate supply system from the windmill tower, this outfit affords a desirable supply.

Towers are built strong and each size designed to withstand the load which it is subjected to. Fitted with heavy anchor posts to securely anchor in the ground. In sandy soil, or loose soil, a concrete base must be used in which to set anchor posts.

Suburban towers are not recommended in cold climates. Tanks being limited in size, ice forming inside in extremely cold weather would practically shut off water supply. Instead we recommend separate substructures and tank as shown on preceding page.

**Towers for 200-Gallon Tank**

Height Taper Feet	Distance to Bottom of Tank Feet	Approx. Weight, Pounds	
		For 4 and 4 1/2" Mills	For 8 and 10 1/2" Mills
25	11	600	650
33	17	725	810
39	22	850	950
44	28	1000	1090
50	33	1160	1250
55	39	1325	1410
61	44	1500	1590

**Towers for 500-Gallon Tank**

33	11	810	825
39	17	965	1075
44	22	1130	1260
50	28	1320	1450
55	33	1510	1650
61	39	1750	1875

**Towers for 1000-Gallon Tank**

39	11	1150	1250
44	17	1350	1450
50	22	1570	1675
55	27	1800	1910
61	33	2025	2150

Above specifications do not include windmill tank, or platform for tank. For specifications on tanks, see below. Lumber for platform can be purchased locally by the user. Steel supports for platform are furnished. A 2-inch pipe must be installed in center of supply tank on 8 and 10-foot mills and 2 1/4-inch pipe on 12-foot mills for pump pole to work through.

**Approx. Weight of Taper Tanks for Towers**

Size.....	gallons	200	500	1000
Wood Tank, Less Cone Cover.....	pounds	250	400	800
Steel Tank, Less Cone Cover.....	pounds	125	185	300
Cone Cover.....	pounds	20	35	45

**Sizes of Taper Tanks**

	200-Gallon		500-Gallon		1000-Gallon	
	Wood	Steel	Wood	Steel	Wood	Steel
Bottom Diameter.....	42	40	60	57	72	68
Top Diameter.....	32	30	40	36	60	56
Height.....	56	51	72	72	84	80

### Acme Windmill Regulators



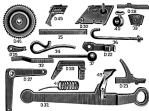
Fig. 101

This regulator keeps the tank full of water without care or attention. It pulls the windmill out of the wind when the tank is full and throws it into the wind when the water in the tank lowers 5 inches. While the mill pumps, the regulator rests. There is no adjustment required. It can be attached by anyone in half an hour. There are no springs to weaken and nothing can get out of order.

Packed 1 in a crate with screws, fixtures and directions. Approximate weight per box, 15 pounds.

Each..... \$30.00

### Repair Parts



No.	Description	Each
D02	Lever Pivot Casting.....	\$ .40
D03	Trip Finger.....	.40
D06	Small Hatchet Dog.....	.40
D07	Angle Lever.....	.40
D08	Slide.....	.40
D09	Guide Bracket.....	.40
D00	Back Plate.....	2.00
D02	Lever.....	1.00
D03	Shove Gased.....	.40
D04	Throw Out Trip.....	.85
D05	Pull Out Lever.....	.40
D08	Hook Bolt.....	.40
D07	Weight Lever.....	.80
D09	Clamp Plate.....	.40
D80	Caldo-Clamp.....	.80
D41	Spring.....	.40
D45	Front Plate.....	.80
D46A	Notch Wheel.....	1.50
D46B	Shove Cover.....	.40
D46	Complete Shove, Made up of Part D46A and D46B Listed Above.....	2.80
D40	Lever Dog.....	.40
....	Cable.....	.80

### Triangles



Fig. 100

These triangles are for operating pumps when the mill has to be erected at a distance.

Triangles should only be used when a direct attachment to pumps cannot be made.

Each..... \$8.00

### Iron Hoisting Crabs

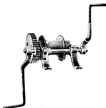


Fig. 107B

This hoisting crab is for raising windmill towers, smokestacks, derricks, etc.

The spool can be quickly removed from frame. Geared back 3 to 1.

Approx. shipping weight, 75 pounds.

Each..... \$15.00

### Dempster Windmill Oil

For the best results, use this high-grade, non-test oil especially prepared for windmill service. Oil cannot be sent by rail.

#### Oil can be had in the following quantities:

- 2½ pints for 8-foot No. 12 and 8-foot No. 15,
- 3½ pints for 8-foot No. 12,
- 2 quarts for 8-foot No. 12-A,
- 3 quarts for 10-foot No. 14, 10-foot No. 13, and 8-foot No. 11
- 3½ quarts for 10-foot No. 12,
- 4 quarts for 12 or 14-foot No. 12, 12-foot No. 15 and 8 or 10-foot Old Style No. 12,
- 5 quarts for 10 or 12-foot No. 11,
- 3 gallons for 10 or 12-foot No. 12 and 14-foot No. 11,
- 5 gallons of oil,
- ½ barrel—approximately 30 gallons,
- 1 barrel—approximately 54 gallons.